which are essential to the health of the organism. In other words, it would seem that in the relation between whole wheat flour and highly milled white flour we are dealing with the same problem as in the relation between unpolished and polished rice. This problem arises, however, only where the diet is restricted and consists almost exclusively of white flour or polished rice, as the case may be. Whether or not polyneuritis gallinarum and beriberi are the same disease is still an open question. This much we know, that the results of dietary experiments in both fowls and mammals are generally uniform. In view of these uniform results it is perhaps not too much to assume that the experiments here reported (including the experiments with whole corn, wheat, grain, hominy, and rice, as well as those with different kinds of wheat bread) have added another link in the chain of evidence that beriberi is a "Deficiency Disease." Finally, these experiments go a long way toward proving that contention of Dr. Little that a restricted diet, consisting largely of white bread, is a large factor if not the single factor in the cause of beriberi in North Newfoundland and Labrador.

The Spread of Tuberculosis.—DR. H. G. LAMPSON (*U. S. Public Health Reports*, January 8, 1915, xxx, No. 2) in his "Studies on the Spread of Tuberculosis in Five Counties of Minnesota" came to the conclusion that 79 per cent. of individuals fully exposed for a long period of time to open cases of tuberculosis, became infected. Only 28 per cent. of those partially exposed or exposed for a short period of time became infected. The percentage of infections from casual exposure such as everyone encounters, was small, 8 per cent. The more frequent infection of children is explained, at least in part, by their more intimate contact with the patient. At all ages, the intimacy and length of exposure are the determining factors in infection with tuberculosis.

PATHOLOGY AND BACTERIOLOGY

UNDER THE CHARGE OF

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The Bacteriology of Typhoid and Paratyphoid Fever at Autopsy.— One of the important findings by Grote (*Arb. a. d. path. Anat. Institut., Tübingen*, 1914, ix, 1) was the infrequency with which B. typhosus was isolated from the intestinal canal. Similar observations upon the living have been reported by many. It is suggested that the organism multiplies but sparsely during its habitat in the bowel or that its growth is actually inhibited by the presence of other bacteria or through the bacterial effect of the intestinal juices. There is little evidence forthcoming to indicate the activities of the B. typhosi during its life in the bowel contents. The author believes that relatively few cases result from a primary invasion from the intestine but considers it a general infection with secondary localization in the lymphatic structures of the bowel. No relation can be indicated between the number or organisms which may be isolated and the intensity and distribution of the tissue change. The demonstration of B. typhosi at autopsy is best accomplished by cultures from the gall bladder. In every case studied, the author obtained pure cultures from this organ. He found no difficulty in isolating the organism from various parenchymatous organs, liver, kidney, spleen, and lung, as well as from blood and cerebrospinal fluid. Contrary to the former accepted belief he found considerable difficulty in isolating B. typhosus from the spleen. In three cases from which the paratyphoid organism was isolated the clinical symptoms had not suggested this infection. In one of these there were cholera-like manifestations, while in another, serious gastro-intestinal symptoms were prominent. An interesting case of a dual infection was reported by Benitker (*Cent. f. Bakt.*, 1914, lxxiv, 1). In this case an individual died of severe meat poisoning due to B. paratyphosus. There was evidence, however, of extensive typhoid ulceration of the ileum, whose character suggested some weeks' duration.

The Relative Virulence of Sensitized and Non-sensitized Typhoid Bacilli.—Besredka has shown that sensitized typhoid vaccines are less toxic and better tolerated in guinea-pigs than the non-sensitized. This has been verified by others who have shown that the sensitized vaccines produce a serum of higher protective quality than the untreated organisms. In view of this, the sensitized vaccine is recommended in practice in place of the usual vaccine of Wright. Cecil (*Jour. Infect. Diseases*, 1915, lvi, 26) has repeated the experiments using dead and living cultures and inoculating them intravenously. His findings are in agreement with previous work where the treatment has been subcutaneous or intraperitoneal. The sensitized vaccines are better tolerated and produce a greater immunity than the non-sensitized. Moreover the lethal dose of the typhoid cultures was much greater with the sensitized vaccine. He believes that the sensitized organisms undergo phagocytosis and bacteriolysis to a greater degree than the untreated one.

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